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350 Track Runner

User's Manual

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TECHNICAL SPECIFICATIONS:

Item No.	: 350
Power supply	: 230 volt AC 50 - 60Hz or 110 volt AC 50-60Hz
Power consumption	: Max 150 Watt.
DMX Control signal	: DMX 512
DMX channels	: 6 channels used.
Power plug	: Powercon TRUE1
Load capacity	: 100 kg. (220 lbs.)
Moving speed	: Variable
Ambient temperature	: 0-40 °C
Noise emission	: < 70 dB
Weight	: 10.5 kg.
Dimensions	: 160 x 290 x 205 mm. (Height-Width-Depth)

Area of use:

The Track Runner is intended for indoor use. It is designed for moving material at the weight and speed stated in "Technical Data". Any other use of the Track Runner may result in a risk of injury of persons or equipment damage.
Exceeding the load rating may cause failure of the equipment.
Use only approved rigging connectors to secure the load to the Track Runner.
Do not modify the Track Runner. Any modification you might need should be done by Wahlberg Light & Motion Design.

It is the customer's responsibility to make sure that any local restrictions concerning the use of the Track Runner are complied with.

Caution: "To reduce the risk of electric shock or injury: USE INDOOR ONLY"

Caution: "To reduce the risk of electric shock, do not expose to rain: STORE INDOOR."

Product content

1 Track Runner
1 Powercon plug for cable
1 Instruction manual

Description

The Track Runner is mounted on an extruded aluminum track at any length (from 1 meter up to 50 meters)
The Track Runner has a load capacity of 100 kg.
The Track Runner is rolled onto the track. When power is connected, the track runner can move horizontally from point to point being controlled from the lighting desk.
The Track Runner is a self-contained DMX controlled motor unit with a DMX interface, motor controller, and also has a positioning control system with PID regulation.
Acceleration and deceleration are controlled automatically with the motor controller, and smooth and precise movements are made easily by programming from the lighting desk.
The Track Runner can hold lamps, scenographic elements and other items for stage/show production.
The Track Runner comes in two versions :

1. with a tooth wheel that allows movement on a beam on an angle up to 30 degrees
2. with a rubber wheel when only horizontal movements are needed.

There are 3 power options for the Track Runner.

- Direct power from a power cable.
- Using rails mounted on the beam to power the Track Runner.
- A battery pack attached to the Track Runner.

The two last options power rails and battery pack allows for 100% wireless control when combined with wireless DMX.
The Track Runner can receive DMX signals either via a DMX cable or using a wireless DMX receiver attacked to the Track Runner.
The Track Runner is for indoor use only!

Attention!

Make sure the operator is able to watch the Track Runner while running it in order to have visual confirmation of the movements.

The Track Runner should only be operated by an experienced DMX-controlled-lighting-desk-operator.

When running manually, the operator should make sure not to be placed in a hazardous situation. Likewise it is the operator's responsibility not to run the Track Runner in a way that brings other persons in a hazardous situation.

During set-up and each time before use, the safe condition of the Track Runner must be established with a visual inspection and a functionality test.

Warning!

Use of the Track Runner for other than the intended purpose can cause injury!

Options

There are a number of options for the Track Runner. Some of these options affect the functionality of the Track Runner.

Drive

For the drive there are two options

- Rubber friction wheel
- Tooth wheel

Power

There are three options for power for the Track Runner

- Direct power via cable
- Power rails on the beam
- Battery pack

DMX

There are two options for DMX signals for the Track Runner

- DMX cable
- Wireless DMX box

Drive

Rubber friction wheel

This allows horizontal movements of the Track Runner. The Track Runner has a load capacity of 100 kg.

Tooth wheel

With the tooth wheel drive it is possible to run the Track Runner on a beam with an (up to) 30 degrees angle. When the beam is on an angle the Track Runner load capacity is reduced.
See below for load capacities.

Angle	Load capacity
0 degrees (Horizontal)	100kg
10 degrees	35kg
20 degrees	20kg
30 degrees	5kg

Power

Direct power via cable

A 230VAC or 110VAC cable with a Powercon TRUE1 connector is plugged in to the Track Runner

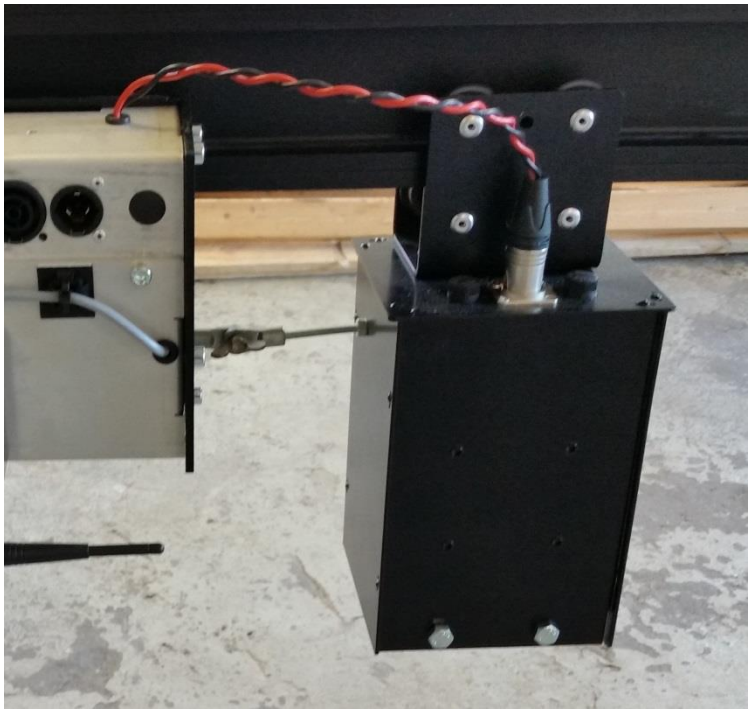
Power rails

The beam is mounted with 2 rails to provide power for the Track Runner. The rails will carry the 230VAC or 110VAC.

This allows for a wireless Track Runner when combined with the wireless DMX option.

Battery pack

A battery pack is attached to the Track Runner. Batteries are recharged using a battery charger provided with the Track Runner.
This allows for a wireless Track Runner when combined with the wireless DMX option.

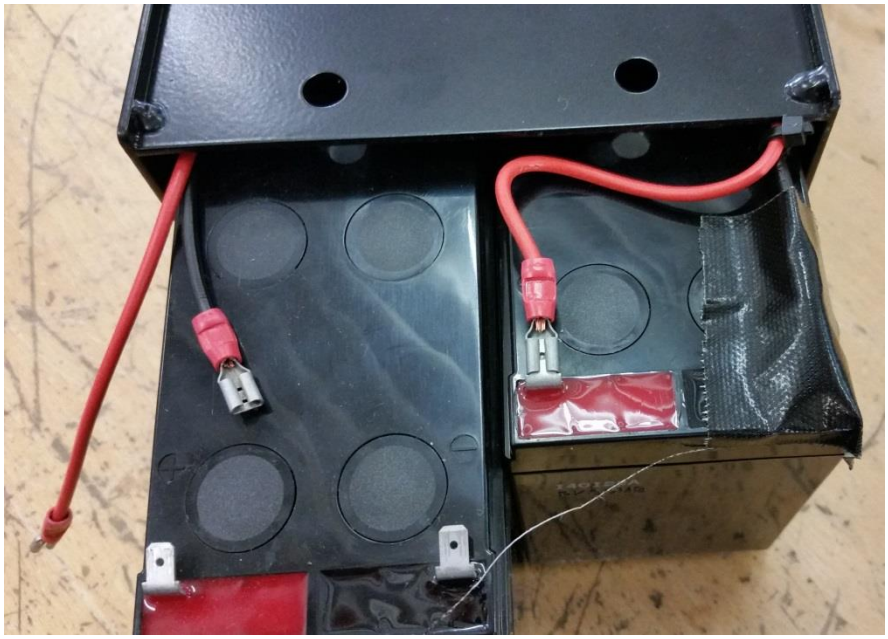


Recharging

The batteries are recharged using the provided battery charger through the connector at the top of the battery pack.

Battery replacement

In order to replace the batteries in the pack, remove it from the track and detach the battery pack from the Track Runner. Then remove the two screws from the top in between the wheels and the two at the bottom. Once all 4 screws are removed, use a long object (NB not a sharp one !) to push the batteries out from the top. Once the batteries are out they can be replaced with new ones. Remember to cover the connectors with duct tape or the similar in order to avoid short circuiting the batteries once the new batteries are connected.



When the batteries are connected push them back in place and the bottom and top screws back in place and tighten them. The battery pack can now be reattached to the Track Runner.

Power out

The track runner has a Powercon TRUE1 female connector that can be used to provide power for objects attached to the Track Runner. The voltage out is the same as the voltage put into the Track Runner.
Note: If the Track Runner is battery powered there is no power out from this connector!

DMX

DMX cable

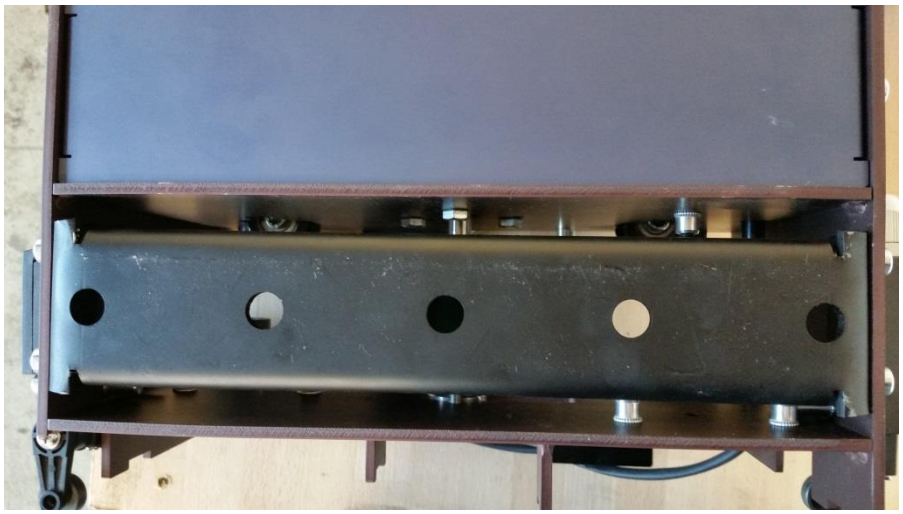
A DMX Cable is connected to the Track Runner. DMX is connected to the 5 pole male XLR connector.

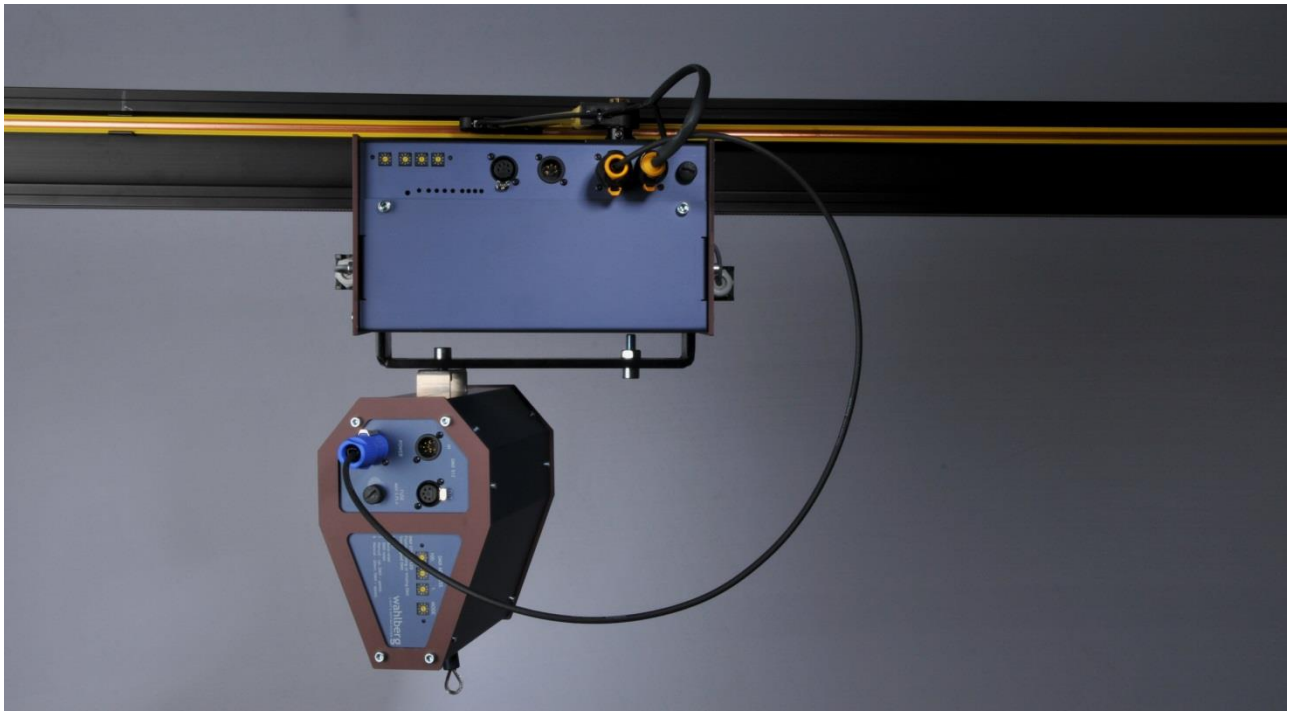
Wireless DMX box

A wireless DMX box is attached to the Track Runner. Combined with power rails or battery pack this allows for wireless operation of the Track Runner.

Connecting Objects to the Track Runner

The Track Runner comes with a beam on the bottom with 5 holes of 8 mm.





DMX channels used for controlling the Track Runner

DMX Control

When the Track Runner is connected to the power supply and a DMX lighting desk, the Track Runner is ready for use and can be controlled from the lighting desk.

DMX channel description

DMX channel 1 – Position rough. (Hi of a 16 bit DMX channel).
DMX channel 2 – Position fine. (Lo of a 16 bit DMX channel).
DMX channel 3 – Maximum speed
DMX channel 4 – Manual reverse / Set reverse position (Position = 100%)
DMX channel 5 – Manual forward / Set forward position (Position = 0%)
DMX channel 6 – Set position, save, enable (51 – 54%)

DMX channel 1 – Position rough. (16 bit DMX channel)

This channel, together with channel 2, makes up a 16 bit position for the Track Runner.
A high value on channel 1 gives a position near the end position set with channel 4. A low value on channel 1 gives a position near the position set with channel 5.

DMX channel 2 – Position fine. (16 bit DMX channel)

This is the fine position of the winch. This channel, together with channel 1, makes up a 16 bit position for the Track Runner.
Channel 2 is used to fine-tune the position.

DMX channel 3 – Maximum speed

Channel 3 is used to control the speed or the maximum speed of the winch.
If channel 3 is 0% the Track Runner will not run.
If channel 3 is 50% the Track Runner will run at 50% speed.

DMX channel 4 – Manual reverse / set reverse position.

Channel 4 is used to move the Track Runner manually in the reverse direction. The Track Runner will move right when looking at the Track Runner from the side with the connection plugs.
20% = 20% of maximum speed 50% = 50% speed.
When channel 6 is set between 51-54% the latest position set with channel 4 will be saved as the position at 0% (Channel 1 and 2). The position is saved when channel 4 is set to 0% after moving with channel 4.

DMX channel 5 – Manual forward / Set forward position

Channel 5 is used to move the Track Runner manually in the forward direction. The Track Runner will move left when looking at the Track Runner from the side with the connection plugs.
20% = 20% of maximum speed 50% = 50% speed.
When channel 6 is set between 51-54% the latest position set with channel 5 will be saved as the position at 100% (Channel 1 and 2). The position is saved when channel 5 is set to 0% after moving with channel 5.

DMX channel 6 – Set position save enabled (51 - 54%)

Channel 6 is used to save the 0% and 100% positions set with channel 4 and 5.

When channel 6 is between 51 – 54% the positions are updated each time channel 4 or 5 is used to move the Track Runner.

When channel 6 is outside 51-54% the positions are not saved when using channel 4 or 5 to move to Track Runner.

Errors and error codes:

Track Runner will not start, no light in LEDs.	Check if the Track Runner is connected to main power. Check if the fuse is blown in the Track Runner
The track runner will not start, DMX lamp is blinking.	Check DMX signal
The Track Runner will not run, DMX LED is steady green.	Check limit switch are pressed.

Power on

The Track Runner will have a green light in the left green LED when it is powered on. The left green LED will flash if no DMX is connected and will be a steady green if DMX is connected.
Power on on the Track Runner assumes it is at the 0% position. If it is not at the 0% position the end positions should be set using channel 4 and 5 with channel 6 between 51-54% to save the positions.
It is advisable to set all the DMX channels on 0 % before the power is established.

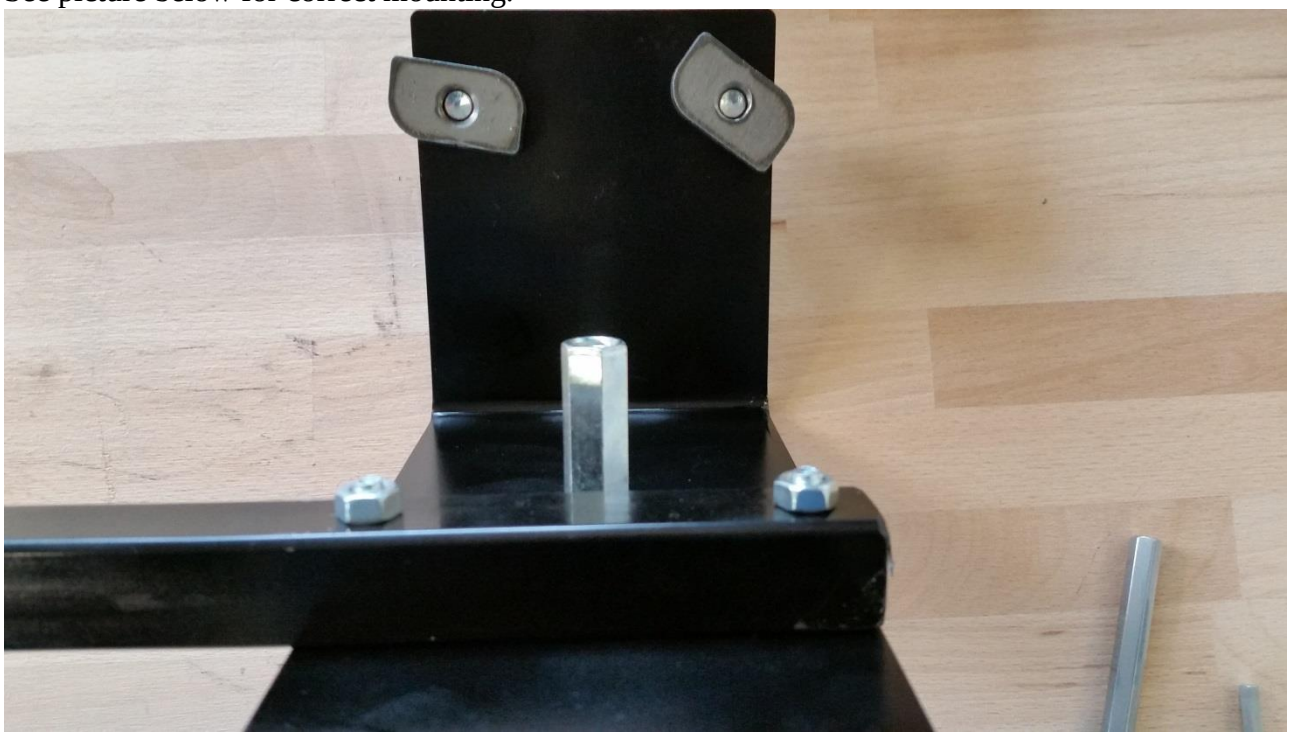
Power failure

The Track Runner will stop at power failure. When the power is reestablished, the Track Runners' end positions need to be set again using channel 4 and 5 with channel 6 between 51-54% in order to save the positions.
It is advisable to set all the DMX channels on 0 % before the power is re established.

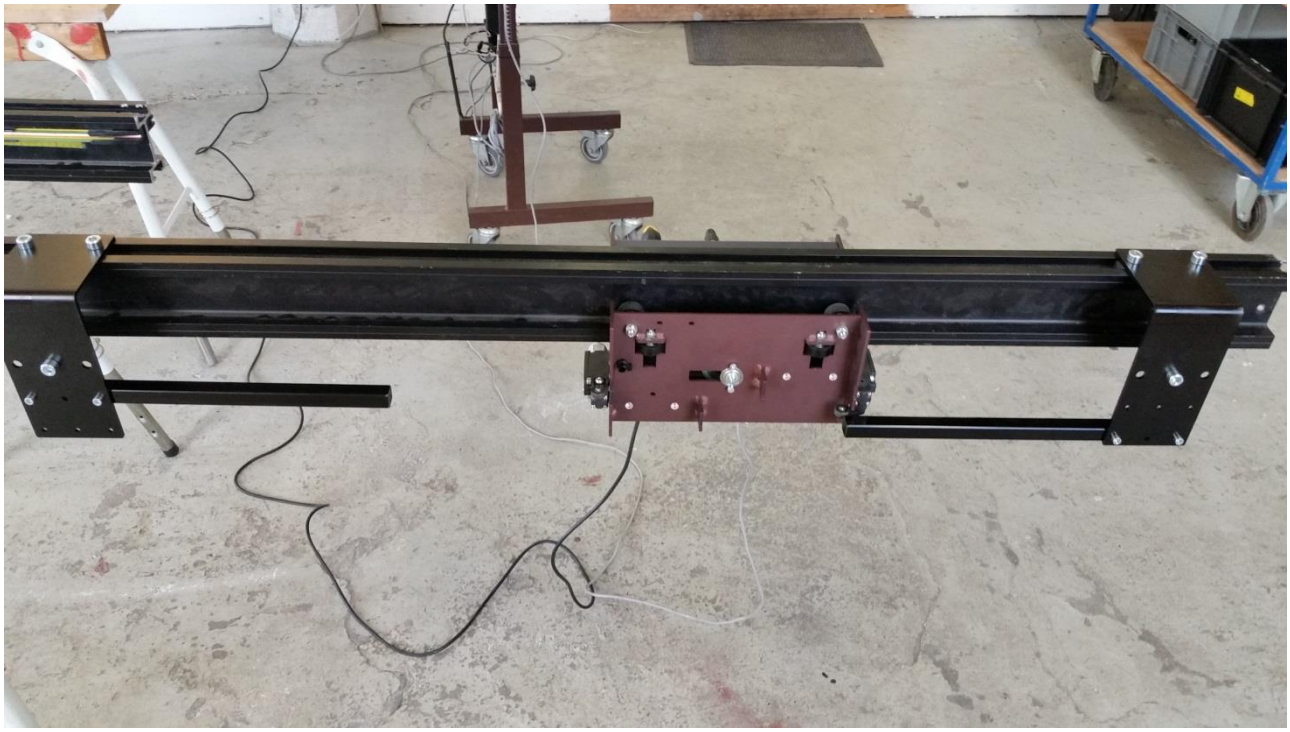
Limits

The limits are mounted on the beam by the help of the L-shaped piece of iron.

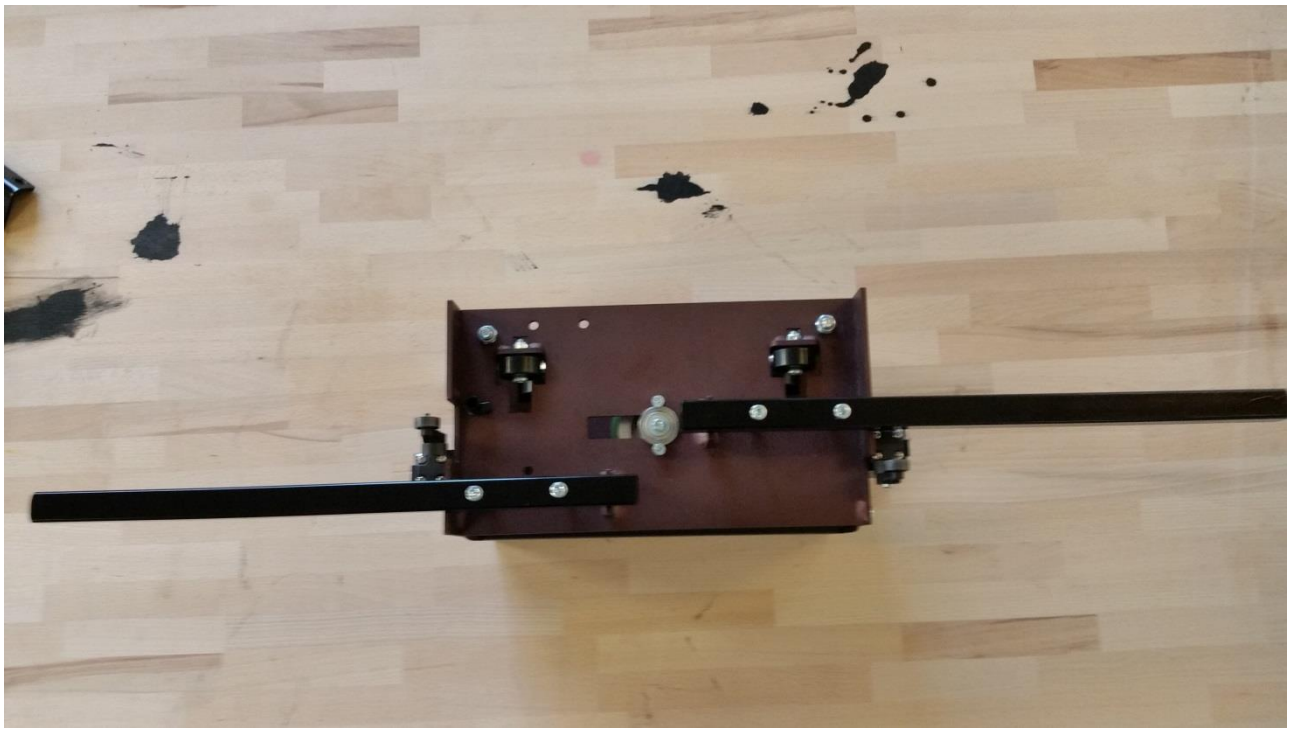
It is important that the mounting pieces are added correctly to ensure secure mounting.
See picture below for correct mounting.



The limits should be mounted as shown in the following picture:



If more than one Track Runner is used on the track at the same time, the iron rods should be mounted as shown herein order to trigger the limits. This is to ensure that the Track Runners do not crash into one other.



Security bolt

Once the Track Runners are on the beam a screw is put in place in order to prevent the Track Runners from running of the beam.
Remove the screw again before sliding the Track Runners of the beam

before the screw is removed again.

Track Runner cheat sheet

MODE functions:	
MODE 0, 1, 6	No functions, the motor stops.
MODE 2	Manual forward slow (→ seeing into connectors) No DMX needed
MODE 3	Manual forward fast (→ seeing into connectors) No DMX needed
MODE 4	Manual reverse slow (← seeing into connectors) No DMX needed
MODE 5	Manual reverse fast (← seeing into connectors) No DMX needed
MODE 7	DMX controlled positioning. Slow start/stop ramp
MODE 8	DMX controlled positioning. Medium start/stop ramp (default)
MODE 9	DMX controlled positioning. Fast start/stop ramp
DMX channels:	
DMX channel 1	Position rough. (Hi of a 16 bit DMX channel).
DMX channel 2	Position fine. (Lo of a 16 bit DMX channel).
DMX channel 3	Max speed.
DMX channel 4	Manual reverse / Set reverse position (Position = 100%)
DMX channel 5	Manual forward / Set forward position (Position = 0%)
DMX channel 6	Set position save enable (51 – 54%)

How to get started.

1. Assemble the track(s).

2. Remove the security bolt in the end of the track.

3. Slide the Track Runner onto the track so that the teeth on the Track Runner and the track are touching.

4. Apply power to the Track Runner. **USE EXTERNAL POWER CONNECTOR! NOT THE POWER RAILS! TO AVOID RISK OF GETTING ELECTROCUTED!** When the Track Runner is on the beam apply power to the beam.
   DMX lamp should be flashing if no DMX is attached and be solid if DMX is attached.

5. Use either manual mode or attach DMX and use channel 4 or 5 to move the Track Runner onto the
   track. Before attaching DMX be sure all channels are pulled to 0%.

6. Mount the security bolt at the end of the track.

7. Mount the end stop on both ends of the track.

8. Pull channel 6 to 52%. This will make it possible to set forward and reverse limits.

9. Pull channel 4 to 20%. The Track Runner will now slowly move right (when seeing into the connectors). When the wanted maximum position (right most position) is reached pull channel 4 to 0%
10. Pull channel 5 to 20%. The Track Runner will now slowly move left (when seeing into the connectors). When the wanted maximum position (left most position) is reached pull channel 5 to 0%
11. Pull channel 1 to 75%
    Pull channel 3 to 50%
    Now the Track Runner will start to move right with 50% speed and stop on a position 75% from the left.
12. Pull channel 1 to 25%
    Now the Track Runner will start to move left with 50% speed, to a position that is at 25%.